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| **Stage 1 Desired Results** | | |
| CCSS-Mathematics Standards  4.NBT.1  4.NBT.2  4.NBT.3  4.NBT.4  4.NBT.5  4.NBT.6  4. OA. 1  4. OA. 2  4. OA. 3  4. OA. 4  4. OA. 5 | ***Transfer*** | |
| *Students will be able to independently use their learning to…*  understand the interconnectedness of the four operations to reason through real world problems. | |
| ***Meaning*** | |
| UNDERSTANDINGS  *Students will understand that…*  \*the place of a number affects it value  \*there are different ways to represent numbers  \*rounding and estimating help us make educated guesses  \*problems can be solved in many ways  \*the four mathematical operations are related  \*there is a relationship between multiples and factors  \*there is a difference between prime and composite numbers  \*there is a rule for every pattern | ESSENTIAL QUESTIONS  How does the position of the digit affect its value?  How is representing numbers in a variety of ways helpful in solving real world problems?  How can preserve through problem solving?  When is an exact answer more desirable than an estimate and vice versa?  What are the patterns in the information we collect and how are they useful? |
| ***Acquisition*** | |
| *Students will know…*  \*Place value is related to multiplication and division by multiples of 10  \*The various ways to write and compare numbers  \*Place value is used to understand rounding  \*Whole numbers can be used in calculations using the four basic operations of addition, subtraction, multiplication, and division  \*Standard algorithms for addition and subtraction  \*Properties of multiplication and division  \*Multiple strategies for problem solving  \*Patterns follow specific rules  \*Characteristics of prime and composite numbers  \*Factors and multiples of whole numbers | *Students will be skilled at…*  \*Identifying the place and value of each digit in a number  \*Using expanded, word, and standard forms  \*Comparing two multi-digit numbers using correct symbols  \*Rounding numbers to any place while checking for reasonableness  \*Using standard algorithms to add and subtract  \*Using a variety of methods (arrays, equations, models) to multiply and divide  \*Writing multiplication statements and equations  \*Writing comparative situations into equations with an unknown and solve  \*Applying the appropriate problem solving strategy to a situation  \*Identifying all factors of a number up to 100  \*Recognizing that a whole number is a multiple of each of its factors  \*Deciding whether a whole number is prime or composite  \*Generating and explaining rules for patterns |
| **Stage 2 – Evidence (Sample Suggestions)** | | |
| **Evaluative Criteria** | **Assessment Evidence** | |
|  | PERFORMANCE TASK(S):  <http://www.k-5mathteachingresources.com>   * Numeral, Word, and Expanded Form (4.NBT.2) * Prime Number Hunt (4.OA.4) * Finding Multiples (4.OA.4) * Interpreting Remainders (4.OA.3) (4.NBT.6) * Find the Factor (4.OA.4)   Play Put in Place  Exit Tickets  Scavenger Hunt  Two Ways to Solve a Problem (Student Sheet 15 from Investigations) | |
|  | OTHER EVIDENCE:  -Informal Observations  -Pre/Post Tests by skill (up to individual schools)  -4th Grade Number Read Alouds/Task Cards  -Black Hole Subtraction Game  -Sum Tic-Tac-Toe  -Playing by the Rules Game  -Clued in the Remainders  -Flight Path | |
| **Stage 3 – Learning Plan (Sample Suggestions)** | | |
| *Summary of Key Learning Events and Instruction*   1. Administer Place Value Pre-Test 2. Play the Bagel Game (Strategies Notebook) 3. Papi’s Computer (Strategies Notebook) 4. Broken Calculator (Strategies Notebook) 5. Play Put in Place 6. How much is a thousand? Use base 10 materials and cubes made from centimeter grid paper (Blackline Master I - 25) to model a thousand. Using these cubes, determine how many flats (models of 100) it takes to make ten thousand; how many longs (models of 10) it takes to make ten thousand. How many of these cubes would it take to model a million? What process did you use to solve this problem? 7. Review what we know about place value with notes 8. Scavenger Hunt (Strategies Notebook) 9. Population Challenge (Strategies Notebook) 10. Apply non-traditional methods to addition and subtraction, then transferring to the standard algorithm and then justify why it works 11. Numeral, Word, and Standard Form Performance Task 12. Review “Friendly Numbers” (Strategies---3rd grade 1.02 a) 13. Number Talks 14. Assessment on Addition and Subtraction using real world math problems 15. Review the properties of multiplication 16. Introduce strategies for multiplying larger numbers (using equations, rectangular arrays, and area models)---array cards---this may take a few weeks   \*Make sure to teach the students to check for reasonableness   1. Teach students how to write a word problem to match a multiplication problem 2. Assessment on Multiplication (Two Ways to Solve a Problem) 3. Introduce strategies for dividing using word problems 4. Teach strategies for dividing (rectangular arrays, making friendly numbers, distributive property, use Number Talks with division, partial quotients, etc.)   \*Make sure to teach the students to check for reasonableness   1. Clued in the Remainders Worksheet 2. Flight Path Game 3. Patterns on Hundreds with Multiples and Factors 4. Teach definitions and examples of Prime and Composite Numbers 5. Playing by the Rules Game 6. Unit Assessment | | |

UbD Template 2.0